

## Differences in Attitudes and Practices of Cancer Pain Management between Medical Oncologists and Palliative Care Physicians

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This study aimed to evaluate whether there are differences in the attitudes and practices of cancer pain management between medical oncologists and palliative care physicians. An online nationwide survey was used to collect responses from board-certified medical oncologists and palliative care physicians in Japan. The survey questionnaire comprised 30 questions. The differences in responses between medical oncologists and palliative care physicians were examined. Out of the 1,227 questionnaires sent, 522 (42.5%) were returned. After applying the exclusion criteria, 445 questionnaires (medical oncologists: n=283; palliative care physicians: n=162) were retained for analysis. Among the questions about potential barriers to optimal cancer pain management, both medical oncologists and palliative care physicians considered the reluctance of patients to take opioids due to fear of adverse effects as the greatest barrier. Significantly different ratings between medical oncologists and palliative care physicians were observed on 5 of the 8 questions in this area. Significantly different ratings were observed for all questions concerning pain specialists and their knowledge. For effective cancer pain management, it is important to account for differences in attitudes and practice between medical oncologists and palliative care physicians.

**Key words:** cancer pain management, opioid, medical oncologist, palliative care physician, barriers

Cancer pain is one of the most common symptoms associated with cancer, and palliation of cancer pain is thus an important issue in cancer care. Several clinical guidelines for cancer pain management have been published [National Comprehensive Cancer Network: NCCN Clinical Practice Guidelines in Oncology, Adult Cancer Pain. [http://www.nccn.org/professionals/physician\\_gls/PDF/pain.pdf](http://www.nccn.org/professionals/physician_gls/PDF/pain.pdf) (accessed November 2 2020)] [1-3], with the World Health Organization (WHO) analgesic ladder being recog-

nized as the standard in cancer pain management [4]. Treatment of cancer pain has been proposed to be feasible for 70-90% of cancer patients [5]. However, despite the publication of pain management guidelines, many cancer patients remain undertreated [6-9]. Indeed, a large proportion of patients have considerable pain, but receive inadequate analgesia [10]. Furthermore, many cancer outpatients have been reported to receive inadequate pain relief and to have incorrect information about opioids [11]. Unrelieved pain denies comfort to the patients and significantly affects their activities,

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inspiration, involvement with family and friends, and by and large their quality of life [12].

Some studies have explored the causes of inadequate pain control and revealed the existence of both patient-related and physician-related barriers [13, 14]. In terms of physician-related barriers, several studies have assessed the obstructions to therapeutic strategies and shown the following barriers to exist most frequently: (a) inadequate assessment of pain and pain management, (b) patients' reluctance to report their pain or give a pain score, and (c) inadequate knowledge of pain management among professionals [11, 13, 15-18]. However, these studies did not take into account the differences in expertise among physicians. Cancer pain management is typically carried out by a multidisciplinary team composed of various types of professionals, including medical oncologists and palliative care physicians. Despite this multidisciplinary approach, it has not been examined whether medical oncologists and palliative care physicians have different attitudes and practices of cancer pain management.

This study aimed to evaluate whether there are differences in the attitudes and practices of cancer pain management between medical oncologists and palliative care physicians, using a nationwide survey in Japan.

## Material and Methods

The survey questionnaire was composed of 30 questions and was constructed based on a previous report from the United States [18]. Most of the content was similar to that of this previous survey, and was used with the permission of the author. All the questions were close-ended. We developed a survey website to collect the responses. Completion of the survey was estimated to take approximately 3-4 min; this was stated on the website home page. Physicians with diplomate status and certification by the Subspecialty Board of Medical Oncology, Japanese Society of Medical Oncology (JSMO) were surveyed as specialists in active anticancer treatment, and those with diplomate status and certification by the Specialty Board of Palliative Medicine, Japanese Society of Palliative Medicine (JSPM).

Information about age, gender, years in practice, years in cancer treatment, and frequency of opioid prescription was required. A 0-10 numeric rating scale (NRS) was used to estimate attitudes about cancer pain

management, with 0 indicating no agreement and 10 indicating highest agreement with the questionnaire items. The survey questions focused on the physicians' ability, knowledge about analgesics, and education in cancer pain management, and on patient barriers to pain treatment.

This survey was approved by the institutional review board of the Okayama University Hospital. Randomized ID numbers for blinding and preventing double votes were administered and delivered by the executive office of the societies. The survey for JSMO diplomates was performed from January to March 2013, and the survey for JSPM diplomates was performed from March to May 2014. Request statements with the website address and IDs for blinding were e-mailed to diplomates from the executive office of each society. The survey data were downloaded from the server and analyzed.

Statistical analyses were performed with the SPSS statistical software package (version 16.0.1 for Windows; SPSS, Chicago, IL, USA). Continuous variables were assessed using Wilcoxon test and categorical variables using Fisher's exact test. We considered  $p$  values  $< 0.05$  as statistically significant.

## Results

### *Response Rates and Sample Characteristics.*

Figure 1 shows the CONSORT diagram for patient inclusion in this study. A total of 1,381 physicians from the executive offices of JSMO and JSPM were qualified to participate in this study. A total of 154 (11.1%) physicians were excluded due to missing email address information. Thus, a total of 1,227 questionnaires were delivered, out of which 522 (42.5%) were returned. Of these, 36 were excluded due to inconsistencies in the blind ID numbers, 9 due to physicians declaring disagreement with the study, and 32 because the respondents were diplomates of both societies. As a result, 445 questionnaires were considered valid for analysis.

A total of 283 (63.6%) physicians were Diplomates, Subspecialty Board of Medical Oncology, JSMO, and 162 (36.4%) were Diplomates, Subspecialty Board of Palliative Medicine, JSPM. The characteristics of surveyed physicians are displayed in Table 1. The medical oncologists (age range: 40-49 years) were significantly younger than the palliative care physicians (50-59 years) ( $p < 0.001$ ; Table 1). In terms of gender, 29 (10.2%) of medical oncologists and 18 (11.1%) of palliative care

physicians were female, indicating no significant difference in gender. Similarly, there was no significant differences in the routine examination of cancer patients

between medical oncologists and palliative care physicians. However, palliative care physicians examined cancer patients ( $p=0.004$ ) and prescribed opioids for cancer pain ( $p=0.008$ ) significantly more frequently than medical oncologists.

Responses regarding clinical care, attitudes and practices by medical oncologists and palliative care physicians were shown in Table 2.

**Attitudes.** Palliative care physicians rated themselves as adequately relieving cancer pain (Question 1 [Q1]: average rating: 8.0). In contrast, medical oncologists rated the ability of palliative care physicians to relieve cancer pain significantly lower (Q1: average: 7.4). On the other hand, both palliative care physicians (Q1, 2: 4.8 < 8.0) and medical oncologists (Q1, 2: 4.8 < 7.4) rated the ability of general physicians to relieve cancer pain numerically lower than their own respective abilities. The rating for the accuracy of patient self-reports about cancer pain was not high in either group (Q3: medical oncologists: 5.2; palliative care physicians: 5.0;  $p=0.270$ ). In terms of potential barriers to optimal cancer pain management, both medical oncologists and palliative care physicians gave “patients’ reluctance to take opioids due to the fear of adverse effects” the highest score numerically (Q4c: 5.8). Among

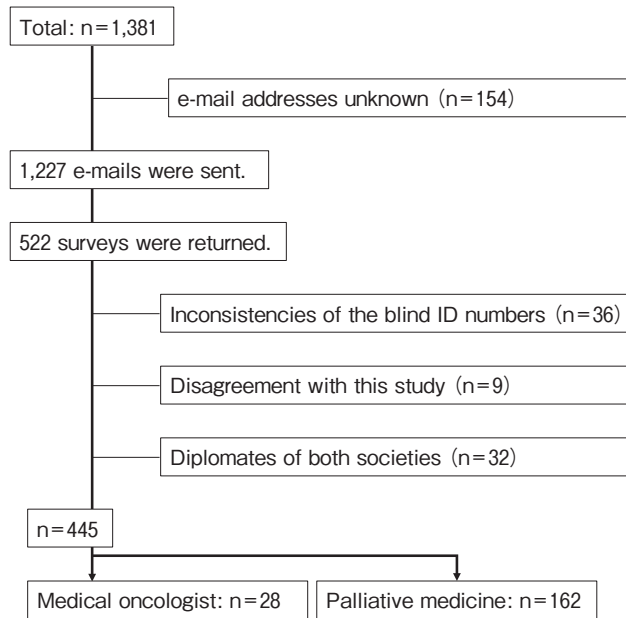


Fig. 1 CONSORT diagram illustrating the enrollment of physicians in the study.

Table 1 Characteristics of surveyed physicians

	Medical oncologists		Palliative care physicians		P value*
	n=283	%	n=162	%	
Age (years)					
30–39	102	36.0	8	4.9	<0.001
40–49	134	47.3	54	33.3	
50–59	47	16.6	78	48.1	
60 ≤	0	0.0	22	13.6	
Gender					
Male	254	89.8	144	88.9	0.873
Female	29	10.2	18	11.1	
Routine examination of cancer patients					
Yes	271	95.8	157	96.9	0.617
No	12	4.2	5	3.1	
Frequency of daily examination of cancer patients					
Less than once a week	37	13.1	16	9.9	0.004
About once a week	79	27.9	26	16.0	
Multiple times a week	167	59.0	120	74.1	
Opportunity to prescribe opioids for cancer pain on an outpatient basis					
Less than once a week	51	18.0	31	19.1	0.008
About once a week	75	26.5	23	14.2	
Multiple times a week	157	55.5	108	66.7	

\*P values were calculated by Fisher’s exact test.

**Table 2** Responses regarding clinical care, attitudes, and practices by medical oncologists and palliative care physicians\*

Question	Medical oncologists (n = 283)		Palliative care physicians (n = 162)		P value
	Average	SD	Average	SD	
1. Are you adequately relieving cancer pain? (higher numbers signify greater adequacy)	7.4	1.2	8.0	1.4	<0.001
2. How well do general physicians relieve cancer pain? (higher numbers signify better performance)	4.8	1.6	4.8	1.4	0.472
3. How accurate do you believe patient self-reports of pain are? (higher numbers signify higher accuracy)	5.2	1.6	5.0	1.6	0.270
4. Rate the significance of the following potential barriers to optimal cancer pain management (higher numbers indicate greater barriers)					
a. Patient reluctance to report pain	4.5	2.3	4.6	2.4	0.677
b. Patient reluctance to take opioids due to fear of addiction	5.1	2.5	5.1	2.5	0.750
c. Patient reluctance to take opioids due to fear of adverse effects	5.8	2.3	5.8	2.2	0.844
d. Physician reluctance to prescribe opioids	2.7	2.5	4.1	2.5	<0.0001
e. Excessive regulation of opioid drugs	3.2	2.7	5.6	2.7	<0.0001
f. Inadequate assessment of pain by physicians and medical staff	5.4	2.3	3.3	2.6	<0.0001
g. Lack of available pain specialists or palliative medicine specialists	5.0	2.8	3.8	2.5	<0.0001
h. Patient inability to pay for medical services or analgesics	3.5	2.0	2.9	2.2	<0.001
5. Rate the reasons why general physicians treating cancer patients do not refer them to pain specialists (higher numbers indicate greater significance)					
a. Pain specialists are not available in my region	6.5	2.7	3.7	2.6	<0.001
b. Pain specialists do not want to treat cancer patients	3.4	2.5	3.9	2.4	0.016
c. Appointments with pain specialists are difficult to get	4.5	2.9	6.6	2.0	<0.001
d. Pain specialists tend to immediately perform invasive treatment	2.7	2.1	5.1	2.3	<0.001
e. Pain specialists do not understand oncology	3.4	2.6	3.8	2.2	0.023
6. Rate the following (higher numbers signify more agreement)					
a. Opioids are the first-line approach for moderate to severe chronic pain associated with cancer	8.3	2.3	8.1	2.3	0.247
b. Regularly scheduled opioid dosing is more effective than as-needed dosing for chronic cancer pain	9.0	1.4	8.8	1.7	0.230
c. Opioids are less effective for neuropathic pain than non-steroidal anti-inflammatory drugs and/or antiepileptic agents	5.3	2.6	4.5	2.7	0.001
7. Rate the following (higher numbers signify greater adequacy)					
a. The adequacy of education and training about cancer pain management in medical school in Japan	3.5	2.1	3.3	2.0	0.441
b. The adequacy of education and training about cancer pain management in residency in Japan	3.8	2.1	3.6	1.9	0.711

\*P values were calculated by Wilcoxon test, SD, standard deviation.

potential barriers to optimal cancer pain management, palliative care physicians gave significantly higher ratings to “Q4d: Physician reluctance to prescribe opioids” and “Q4e: Excessive regulation of opioid drugs” than medical oncologists. On the other hand, medical oncologists gave significantly higher ratings to “Q4f: Inadequate assessment of pain by physicians and medical staff”, “Q4g: Lack of available pain specialists or palliative medicine specialists”, and “Q4h: Patient inability to pay for medical services or analgesics” than palliative care physicians. Ratings on the other ques-

tions, “Q4a: Patient reluctance to report pain”, “Q4b: Patient reluctance to take opioids due to fear of addiction”, and “Q4c: Patient reluctance to take opioids due to fear of adverse effects” were not significantly different between the two groups.

**Practice.** Next, we analyzed the responses about pain specialists and knowledge. Interestingly, there were significant differences in the ratings on all questions (Q5a-e) related to the reasons that general physicians treating cancer patients do not refer them to pain specialists (*i.e.*, medical oncologists and palliative care

physicians). Medical oncologists gave significantly higher ratings on “Q5a: Pain specialists are not available in my region” than palliative care physicians. On the other hand, palliative care physicians gave significantly higher ratings on “Q5b: Pain specialists do not want to treat cancer patients”, “Q5c: Appointments with pain specialists are difficult to get”, “Q5d: Pain specialists tend to immediately perform invasive treatment”, and “Q5e: Pain specialists do not understand oncology” than medical oncologists.

With regard to questions about commonly accepted clinical practices for pain relief, the surveyed physicians in both groups gave high ratings on two out of the three questions: “Q6a: Opioids are the first-line approach for moderate to severe chronic pain associated with cancer (medical oncologists: 8.3; palliative care physicians: 8.1)” and “Q6b: Regularly scheduled opioid dosing is more effective than as-needed dosing for chronic cancer pain (medical oncologists: 9.0; palliative care physicians: 8.8)”. However, ratings on “Q6c: Opioids are less effective for neuropathic pain than non-steroidal anti-inflammatory drugs and/or antiepileptic agents” were lower.

**Training.** Regarding the questions on education, Q7a and b: The adequacy of education and training about cancer pain management in medical school and in residency in Japan, there were no significant differences between the ratings of medical oncologists and palliative care physicians, although both groups gave relatively low ratings for both education and training in medical school and residency (range: 3.3-3.8).

## Discussion

Our results indicate that medical oncologists and palliative care physicians have different attitudes and practices of cancer pain management. Five of the eight questions (Q4a-h about the potential barriers to optimal cancer pain management) were rated significantly differently by medical oncologists and palliative care physicians. Furthermore, the ratings on all five questions about pain specialists (Q5a-e) were significantly different between the 2 groups. We also found that both medical oncologists and palliative care physicians considered “patient reluctant to take opioids due to fear of adverse effects” as the most important barrier to optimal cancer pain management, and they believed that more intensive education and training on cancer pain

management were needed in medical school and residency.

The several previous studies conducted to assess cancer pain management did not take into consideration the differences in physicians' majors. With regard to physician-related barriers, in a survey conducted by the Eastern Cooperative Oncology Group (ECOG) in 1993, 76% of physicians rated poor pain assessment as an important barrier to adequate pain management [11]. Other barriers reported were: patient reluctance to report pain (62%), patient reluctance to take analgesics (62%), and physician reluctance to prescribe opioids (61%) [11]. According to the results of the present study, these barriers remain unresolved over 30 years later. In our survey in Japan, patient reluctance to take opioids due to fear of adverse effects was one of the most important barriers as rated by both medical oncologists and palliative care physicians. Interestingly, of these four previously reported barriers, 2 had significantly different ratings between medical oncologists and palliative care physicians in our findings. One of the countermeasures to overcome these barriers may be to develop effective education for physicians. Our survey also revealed poor ratings with respect to education and training in cancer pain management in medical school and during residency by both medical oncologists and palliative care physicians. Many physicians feel they do not have sufficient opportunities to learn about cancer pain management. In 2007, the Cancer Control Act was approved in Japan. Initiated by the Japanese government, this plan promotes a cancer-control program that includes basic palliative care training for physicians who participate in the treatment of patients with cancer. This program is managed by JSPM and is called the Palliative care Emphasis program on symptom management and Assessment for Continuous medical Education (PEACE) project, and is expected to deal with physician barriers with respect to knowledge of opioids [19]. Although medical schools in Japan have recently added some palliative medicine curriculum, in most cases this consists of only about 2 h of lecture time over 6 years of medical education, and there is not systematic curriculum developed specifically for clinical physicians. An evaluation of and reflection on these topics is needed. Moreover, physicians may require education in areas of specialization outside of their fields—*e.g.*, medical oncologists may benefit from education in palliative care, and palliative care physicians from educa-



tion in oncology.

Because cancer pain originates from a complex set of causes, cancer pain management should be conducted by multidisciplinary teams including various specialty physicians and nurses, pharmacists, nutritionists, physiotherapists, and so on. This multidisciplinary approach aims to alleviate distress by controlling symptoms, including cancer pain, as well as by attention to psychosocial concerns. Team members also seek to facilitate care and advance communication between professionals and the individual patient and family. A meta-analysis of 19 studies to assess the effectiveness of palliative and hospice care multidisciplinary teams demonstrated that these teams have benefits for alleviating patients' pain and other symptoms [20]. To maximize the effectiveness of treatment, it may be necessary for professionals to recognize each other's differences and strengths when deciding on a treatment strategy. Our findings showed that both groups of physicians surveyed, but especially the palliative care physicians, thought they had adequate ability to relieve cancer pain in their patients (Q1), but rated the ability of general physicians to relieve cancer pain as lower than their own (Q2). As there were no patient-reported outcomes assessed in our survey, we did not have data regarding which experts actually show the best performance on cancer pain management.

Another issue reported was inaccessibility to pain specialists. One of the reasons for this inaccessibility may be a shortage in the number of pain specialists in Japan, because anesthesiologists are permitted to perform cancer pain control along with practicing general anesthesia. Interestingly, there were significant differences in the ratings on all the questions related to the question of why general physicians do not refer their cancer patients to pain specialists (Q5a-e). Palliative care physicians gave significantly higher ratings than medical oncologists on four of these 5 questions. These differences may have been due to the different frequencies of daily examination of cancer patients and different opportunities to prescribe opioids between the practice of the 2 types of specialists.

There were several limitations in this study. First, the response rate, which was only 40% despite reminder emails, may not be sufficient, although the average response rate of previous Internet surveys was 34% (min. 7%-max. 89%) [21]. Second, our survey was conducted only with physicians, and did not include

patients. There may be unknown gaps between physicians and patients that could lead to false-negative or -positive results. Third, there may be a multiplicity of issues caused by the use of multiple statistical tests, and they may lead to false-positive results.

In spite of these limitations, overall our observations were consistent with the previously reported barriers and the hypothesis that medical oncologists and palliative care physicians have different attitudes and practices of cancer pain management. To our knowledge, this is the first study to assess the attitudes and practices of cancer pain management by medical oncologists and palliative care physicians separately. Several similar physician surveys have been performed in other countries without any stratification by physician specialties [15,19,22-25]. In the present survey, we selected medical oncologists and palliative care physicians as opioid prescribers, because they are authorized by certification examinations administered by medical societies, and therefore represent a restricted population. For effective cancer pain management, it is important to account for differences in the attitudes and practices between medical oncologists and palliative care physicians.

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